

SUPPORTING STATEMENT

30 CFR Sections 75.215, 75.220, 75.221, 75.222, and 75.223: Roof control Plan. (Pertains to underground coal mines.)

A. JUSTIFICATION

1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.

Section 302(a) of the Federal Mine Safety and Health Act of 1977 (Mine Act) 30 U.S. C. §846, requires that a roof control plan and revisions thereof suitable to the roof conditions and mining system of each coal mine be first approved by the Secretary of Labor (Secretary) before implementation by the operator. The plan must show the type of support and spacing approved by the Secretary, and the plan must be reviewed at least every six months by the Secretary.

Under 30 C.F.R. §75.220 each mine operator shall develop and follow a roof control plan, approved by the District Manager, that is suitable to the prevailing geological conditions, and the mining system to be used at the mine. Additional measures shall be taken to protect persons if unusual hazards are encountered.

Under 30 C.F.R. §75.221, the information required to be submitted and approved in the roof control plan includes the following: (1) the name and address of the company/ (2) the name, address, mine identification number and location of the mine; (3) the name and title of the company official responsible for the plan; (4) a description of the mine strata; (5) a description and drawings of the sequence of installation and spacing of supports for each method of mining used; (6) the maximum distance that an ATRS system is to be set beyond the last row of permanent support (if appropriate); (7) specifications and installation procedures for liners or arches (if appropriate); (8) drawings indicating the planned width of openings, size of pillars, method of pillar recovery, and the sequence of mining pillars; (9) a list of all support materials required to be used in the roof, face and rib control system; (10) the intervals at which test holds will be drilled (if appropriate); and (11) a description of the methods to be used for the protection of persons. Under 30 C.F.R. §75.215, the roof control plan for each longwall mining section is required to specify the methods that will be used to maintain a safe travelway out of the section through the tailgate side of the longwall and the procedures that will be followed if a ground failure prevents travel out of the section through the tailgate side of the longwall.

Roof control plans are evaluated by Mine Safety and Health Administration (MSHA) specialists on the basis of the criteria set forth in 30 C.F.R. §75.222. The District Manager may require additional measures in plans and may approve roof control plans that do not conform to the applicable criteria in this section, provided that effective control of the roof, face, and ribs can be maintained.

Under 30 C.F.R. § 75.223, a mine operator is required to propose revisions to the roof control plan when conditions indicate that the plan is not suitable for controlling the roof, face, ribs, or coal or rock bursts, or when accident and injury experience at the mine indicates the plan is inadequate. Mine operators are also required to plot on a mine map each unplanned roof or rib fall and coal or rock burst that occurs in the

active workings when certain criteria are met. The regulation also requires MSHA to review the plan every 6 months.

2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.

Roof Control plans provide the means to instruct miners, who install roof supports, in the proper use and placement of roof supports. The plan also provides a reference for mine supervisors to ensure that the mine is in compliance with the MSHA regulations relating to roof control. Roof control plans are evaluated by MSHA personnel to assure that mine operators have complied with the regulatory provisions outlined in 30 C.F.R. §§ 75.202 through 75.214. MSHA inspectors also refer to the plans when they are conducting safety and health inspections at the mines.

Approved roof control plans from the different MSHA coal mine safety and health districts are reviewed by MSHA roof control specialists to determine compliance with the regulations and to evaluate the roof and rib support methods used to provide a safe working environment. As ground control questions arise, the review of different roof control plans can provide solutions to problems that have been successfully addressed by other district. The sharing of roof control plans within the agency also allows inspectors to communicate the latest mining technology to the nation's miner operators and miners and allows them to take advantage of MSHA's technical ground support group that conducts studies on mining and support methods and evaluates their effectiveness. The success of this program is evidenced by the fact that Technical Support has evaluated numerous hazardous ground conditions at the nation's mining operations and suggested prudent methods of support based on scientific and proven ground control methods.

3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g. permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also describe any consideration of using information technology to reduce burden.

No improved information technology has been identified that would reduce the burden. While there are no specific guidelines posted on MSHA's Website, mine operators can submit the information electronically.

4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in Item 2 above.

Roof control plans are developed to address the unique roof conditions and mining methods at each mine. There is no similar or duplicate information that could be used.

5. If the collection of information impacts small businesses or other small entities (Item 5 of OMB Form 83-I), describe any methods used to minimize burden.

This information does not have a significant impact on small businesses or other small entities. However, MSHA has made available on our web-site various sources of information, such as "Technical

Assistance,” “Best Practices,” and an “Accident Prevention” site. To assist with compliance, these provide tips and general information on a number of various topics.

6. Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.

Roof control plans must be submitted by a mine operator when a new mine opens. If a mine operator takes over a mine where a roof control plan is already in place, the operator may choose to adopt that plan and not submit a new plan. Revisions to the roof control plan must be submitted when conditions indicate that the current plan is not suitable for controlling the roof, face, ribs, or coal or rock bursts, or when accident and injury experience at the mine indicates the plan is inadequate. Only the revised pages of the plan need to be submitted to MSHA unless otherwise specified by the District Manager. MSHA reviews the plans every 6 months to ensure that the roof control methods are adequate for the conditions and mining methods of the mine. If MSHA finds that no changes are necessary, the mine operator need not submit any revisions.

7. Explain any special circumstances that would cause an information collection to be conducted in a manner:

- * requiring respondents to report information to the agency more often than quarterly;
- * requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it;
- * requiring respondents to submit more than an original and two copies of any document;
- * requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records for more than three years;
- * in connection with a statistical survey, that is not designed to produce valid and reliable results that can be generalized to the universe of study;
- * requiring the use of a statistical data classification that has not been reviewed and approved by OMB;
- * that includes a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or
- * requiring respondents to submit proprietary trade secret, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.

Collection of information is consistent with the guidelines in 5 C.F.R. §1320.5. While there is no specific provision that roof control plans be maintained for at least three years, there must be a valid plan in effect for the entire time the mine is in operation. Without a valid plan, MSHA would not be able to determine whether miners were being exposed to hazardous rood conditions that could jeopardize their safety.

8. If applicable, provide a copy and identify the date and page number of publication in the Federal Register of the agency's notice, required by 5 CFR 1320.8(d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to these comments. Specifically address comments received on cost and hour burden.

Describe efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.

Consultation with representatives of those from whom information is to be obtained or those who must compile records should occur at least once every 3 years-even if the collection of information activity is the same as in prior periods. There may be circumstances that may preclude consultation in a specific situation. These circumstances should be explained.

In accordance with 5 CFR 1320.8 (d), MSHA will publish the proposed information collection requirements in the Federal Register, notifying the public that these information collection requirements are being reviewed in accordance with the Paperwork Reduction Act of 1995, and giving interested persons 60 days to submit comments.

9. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.

MSHA has made the decision not to provide payment or gifts to the respondents identified by this collection.

10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.

There is no personal information requiring confidentiality.

11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information, the explanation to be given to persons from whom the information is requested, and any steps to be taken to obtain their consent.

There are no questions of a sensitive nature.

12. Provide estimates of the hour burden of the collection of information. The statement should:

- **Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, agencies should not conduct special surveys to obtain information on which to base hour burden estimates. Consultation with a sample (fewer than 10) of potential respondents is desirable. If the hour burden on respondents is expected to vary widely because of differences in activity, size, or complexity, show the range of estimated hour burden, and explain the reasons for the variance. Generally, estimates should not include burden hours for customary and usual business practices.**

- **If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens in Item 13 of OMB Form 83-I.**
- **Provide estimates of annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories. The cost of contracting out or paying outside parties for information collection activities should not be included here. Instead, this cost should be included in Item 14.**

Each underground coal mine operator is required to develop a roof control plan. 30 CFR 75.221 lists 11 items of information which ranges from name, address, mine identification number, and location of the mine to a typical columnar section of the mine strata which shall identify the type and show the thickness of each stratus up to and including the main roof above the coalbed and for distance of at least 10 feet below the coal bed.

Some of this information may be retrieved fairly easily where as others may require more research time, especially when developing a new plan.

Revisions to plans, because they are based off of an existing plan, will not require as much time. Revisions can occur as a result to an existing problem, instituting new technology, or as a cost savings to the mine operator. Again, some may be considered more complex than others.

The burden estimated by MSHA is based on our knowledge of the mining industry and our frequent interaction with the mining industry. MSHA employees, who have previously worked for the mining industry and who have prepared roof control plans for mining companies, have substantiated the time required to produce a roof control plan.

According to MSHA records, there were 627 underground coal mines in 2004. Of this number, there were 114 new mines that were required to submit new roof control plans. While roof control plans vary according to the size and complexity of each individual mine, MSHA estimates that it takes approximately 24 hours for a mine operator to prepare a new roof control plan. The following wage rates are used for burden calculations: Coal Miner = \$26.39 and Supvr./Operator = \$59.19

114 new mines x 24 hours/plan	=	2,736 hours
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2,736 hours x \$59.12 per hour	=	\$161,752
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In addition, MSHA estimates that each mine operator (627 mines) may need to submit plan revisions. An operator may need to submit more than one revision if conditions require it. In 2004, MSHA received 812 plan revisions. MSHA estimates that it takes a mine operator approximately 5 hours to draft a plan revision.

812 revisions x 5 hours/revision	=	4,060 hours
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4,060 hours x \$59.19 per hour	=	\$240,311
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Underground coal mine operators are also required to plot each unplanned roof fall, rib fall, and coal rock burst on a mine map when such incidents meet the criteria specified in 30 C.F.R. § 75.223(b). MSHA

estimates that it takes 5 minutes (0.08 hours) to plot a roof fall or a coal or rock burst on a map. There were approximately 1,539 unplanned roof falls and coal or rock bursts which met the specified criteria and that occurred in underground coal mines in 2004.

1,539 roof falls/coal/rock bursts x 0.08 hours	=	123 hours
123 hours x 59.19 per hour	=	\$7,280
Total Burden Hours	=	6,919 hours
Total Burden Hour Cost	=	\$ 409,343

13. Provide an estimate of the total annual cost burden to respondents or recordkeepers resulting from the collection of information. (Do not include the cost of any hour burden shown in Items 12 and 14).

. The cost estimate should be split into two components: (a) a total capital and start-up cost component (annualized over its expected useful life); and (b) a total operation and maintenance and purchase of services component. The estimates should take into account costs associated with generating, maintaining, and disclosing or providing the information. Include descriptions of methods used to estimate major cost factors including system and technology acquisition, expected useful life of capital equipment, the discount rate(s), and the time period over which costs will be incurred. Capital and start-up costs include, among other items, preparations for collecting information such as purchasing computers and software; monitoring, sampling, drilling and testing equipment; and record storage facilities.

. If cost estimates are expected to vary widely, agencies should present ranges of cost burdens and explain the reasons for the variance. The cost of purchasing or contracting out information collection services should be a part of this cost burden estimate. In developing cost burden estimates, agencies may consult with a sample of respondents (fewer than 10), utilize the 60-day pre-OMB submission public comment process and use existing economic or regulatory impact analysis associated with the rulemaking containing the information collection, as appropriate.

. Generally, estimates should not include purchases of equipment or services, or portions thereof, made: (1) prior to October 1, 1995, (2) to achieve regulatory compliance with requirements not associated with the information collection, (3) for reasons other than to provide information or keep records for the government, or (4) as part of customary and usual business or private practices.

Operation and Maintenance: MSHA estimates that the average copying and mailing cost for new roof control plans or plan revisions is \$5.00

926 new and revised plans x \$5.00	=	\$4,630
Total Burden Costs	=	\$ 4,630

14. Provide estimates of annualized cost to the Federal government. Also provide a description of the method used to estimate cost, which should include quantification of hours, operational expenses (such as equipment, overhead, printing, and support staff), and any other expense that would not have been incurred without this collection of information. Agencies also may aggregate cost estimates from Items 12, 13, and 14 in a single table.

MSHA's records show that there are approximately 627 existing underground coal mines. Based on internal review, MSHA personnel estimate that it takes approximately 16 hours to review and approve a new roof control plan. (Based on an avg. salary of \$29.44 for an MSHA roof control specialist Grade 12 step 5)

114 new plans x 16 hours/plan	=	1,824 hours
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1,824 hours x \$29.44	=	\$53,699
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In 2004, MSHA received 812 roof control plan revisions. MSHA estimates that it takes approximately 4 hours to review a plan revision.

812 revisions x 4 hours/plan	=	3,248
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3,248 hours x \$29.44 per hour	=	\$95,621
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Total Cost to the Government	=	\$149,320
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15. Explain the reasons for any program changes or adjustments reported in Items 13 or 14 of the OMB Form 83-I.

Respondents: There has been a 266 decrease in the number of respondents (893 to 627) due to a decrease in the number of underground coal mines.

Responses: There has been a decrease of 292 responses (2,757 to 2,465), also due to a decrease in the number of mines.

Hours: There has been an increase of 867 burden hours (6,053 to 6,919). From the last report to this submission – time remained constant. There were a greater number of new plans submitted compared to the decrease in the number of revisions submitted. More time is needed to submit a new plan than a revised plan; therefore the difference did not offset hours but resulted in a slight overall increase in hours.

Costs: A decrease in costs \$390 (\$5,020 to \$4,630) occurred. Copying and mailing costs remained constant from this submission to the last submission; therefore, the difference is due to the total number of plans submitted (new and revised). Although there is an increase in the number of new plans, the total number of plans submitted is down from the last report.

16. For collections of information whose results will be published, outline plans for tabulation, and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including the beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.

The results of this information collection are not scheduled for publication.

17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.

MSHA has no forms associated with this collection of information on which to display an expiration date.

18. Explain each exception to the certification statement identified in Item 19, "Certification for Paperwork Reduction Act Submissions," of OMB Form 83-I.

There are no certification exceptions identified with this information collection.

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

The agency should be prepared to justify its decision not to use statistical methods in any case where such methods might reduce burden or improve accuracy of results. When Item 17 on the Form OMB 83-I is checked "Yes", the following documentation should be included in the Supporting Statement to the extent that it applies to the methods proposed:

1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g., establishments, State and local government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

2. Describe the procedures for the collection of information including:

- . Statistical methodology for stratification and sample selection,
- . Estimation procedure,
- . Degree of accuracy needed for the purpose described in the justification,
- . Unusual problems requiring specialized sampling procedures, and
- . Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

3. Describe methods to maximize response rates and to deal with issues of non-response. The accuracy and reliability of information collected must be shown to be adequate for intended uses. For collections based on sampling, a special justification must be provided for any collection that will not yield "reliable" data that can be generalized to the universe studied.

4. Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

5. Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the agency unit, contractor(s), grantee(s), or other persons(s) who will actually collect and/or analyze the information for the agency.

As statistical analysis is not required by the regulation, questions 1 through 5 do not apply.

**Federal Mine Safety & Health Act of 1977,
Public Law 91-173,
as amended by Public Law 95-164**

ROOF SUPPORT

SEC. 302. (a) Each operator shall undertake to carry out on a continuing basis a program to improve the roof control system of each coal mine and the means and measures to accomplish such system. The roof and ribs of all active underground roadways, travelways, and working places shall be supported or otherwise controlled adequately to protect persons from falls of the roof or ribs. A roof control plan and revisions thereof suitable to the roof conditions and mining system of each coal mine and approved by the Secretary shall be adopted and set out in printed form within sixty days after the operative date of this title. The plan shall show the type of support and spacing approved by the Secretary. Such plan shall be reviewed periodically, at least every six months by the Secretary, taking into consideration any falls of roof or ribs or inadequacy of support of roof or ribs. No person shall proceed beyond the last permanent support unless adequate temporary support is provided or unless such temporary support is not required under the approved roof control plan and the absence of such support will not pose a hazard to the miners. A copy of the plan shall be furnished the Secretary or his authorized representative and shall be available to the miners and their representatives.

TITLE 30--MINERAL RESOURCES

CHAPTER I--MINE SAFETY AND HEALTH ADMINISTRATION, DEPARTMENT OF LABOR

PART 75_MANDATORY SAFETY STANDARDS_UNDERGROUND COAL MINES--Table of Contents

Subpart C_Roof Support

Sec. 75.215 Longwall mining systems.

For each longwall mining section, the roof control plan shall specify--

(a) The methods that will be used to maintain a safe travelway out of the section through the tailgate side of the longwall; and

(b) The procedures that will be followed if a ground failure prevents travel out of the section through the tailgate side of the longwall.

TITLE 30--MINERAL RESOURCES

CHAPTER I--MINE SAFETY AND HEALTH ADMINISTRATION, DEPARTMENT OF LABOR

PART 75_MANDATORY SAFETY STANDARDS_UNDERGROUND COAL MINES--Table of Contents

Subpart C_Roof Support

Sec. 75.220 Roof control plan.

(a)(1) Each mine operator shall develop and follow a roof control plan, approved by the District Manager, that is suitable to the prevailing geological conditions, and the mining system to be used at the mine. Additional measures shall be taken to protect persons if unusual hazards are encountered.

(2) The proposed roof control plan and any revisions to the plan shall be submitted, in writing, to the District Manager. When revisions to a roof control plan are proposed, only the revised pages need to be submitted unless otherwise specified by the District Manager.

(b)(1) The mine operator will be notified in writing of the approval or denial of approval of a proposed roof control plan or proposed revision.

(2) When approval of a proposed plan or revision is denied, the deficiencies of the plan or revision and recommended changes will be specified and the mine operator will be afforded an opportunity to discuss the deficiencies and changes with the District Manager.

(3) Before new support materials, devices or systems other than roof bolts and accessories, are used as the only means of roof support, the District Manager may require that their effectiveness be demonstrated by experimental installations.

(c) No proposed roof control plan or revision to a roof control plan shall be implemented before it is approved.

(d) Before implementing an approved revision to a roof control plan, all persons who are affected by the revision shall be instructed in its provisions.

(e) The approved roof control plan and any revisions shall be available to the miners and representative of miners at the mine.

(f) Existing roof control plans that conflict with this subpart C shall be revised to meet the requirements of this subpart C by September 28, 1988. This paragraph (f) shall expire March 28, 1989.

[53 FR 2375, Jan. 27, 1988; 53 FR 11395, Apr. 6, 1988 as amended at 60 FR 33723, June 29, 1995]

TITLE 30--MINERAL RESOURCES

CHAPTER I--MINE SAFETY AND HEALTH ADMINISTRATION, DEPARTMENT OF LABOR

PART 75_MANDATORY SAFETY STANDARDS_UNDERGROUND COAL MINES--Table of Contents

Subpart C_Roof Support

Sec. 75.221 Roof control plan information.

(a) The following information shall be included in each roof control plan:

- (1) The name and address of the company.
- (2) The name, address, mine identification number and location of the mine.
- (3) The name and title of the company official responsible for the plan.
- (4) A typical columnar section of the mine strata which shall--
 - (i) Show the name and the thickness of the coalbed to be mined and any persistent partings;
 - (ii) Identify the type and show the thickness of each stratum up to and including the main roof above the coalbed and for distance of at least 10 feet below the coalbed; and
 - (iii) Indicate the maximum cover over the area to be mined.
- (5) A description and drawings of the sequence of installation and spacing of supports for each method of mining used.
- (6) When an ATRS system is used, the maximum distance that an ATRS

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system is to be set beyond the last row of permanent support.

- (7) When tunnel liners or arches are to be used for roof support, specifications and installation procedures for the liners or arches.
- (8) Drawings indicating the planned width of openings, size of pillars, method of pillar recovery, and the sequence of mining pillars.
- (9) A list of all support materials required to be used in the roof, face and rib control system, including, if roof bolts are to be installed--
 - (i) The length, diameter, grade and type of anchorage unit to be used;
 - (ii) The drill hole size to be used; and
 - (iii) The installed torque or tension range for tensioned roof bolts.
- (10) When mechanically anchored tensioned roof bolts are used, the intervals at which test holes will be drilled.
- (11) A description of the method of protecting persons--
 - (i) From falling material at drift openings; and
 - (ii) When mining approaches within 150 feet of an outcrop.
- (b) Each drawing submitted with a roof control plan shall contain a legend explaining all symbols used and shall specify the scale of the drawing which shall not be less than 5 feet to the inch or more than 20 feet to the inch.
- (c) All roof control plan information, including drawings, shall be submitted on 8 1/2 by 11 inch paper, or paper folded to this size.

TITLE 30--MINERAL RESOURCES

CHAPTER I--MINE SAFETY AND HEALTH ADMINISTRATION, DEPARTMENT OF LABOR

PART 75_MANDATORY SAFETY STANDARDS_UNDERGROUND COAL MINES--Table of Contents

Subpart C_Roof Support

Sec. 75.222 Roof control plan-approval criteria.

(a) This section sets forth the criteria that shall be considered on a mine-by-mine basis in the formulation and approval of roof control plans and revisions. Additional measures may be required in plans by the District Manager. Roof control plans that do not conform to the applicable criteria in this section may be approved by the District Manager, provided that effective control of the roof, face and ribs can be maintained.

(b) Roof Bolting. (1) Roof bolts should be installed on centers not exceeding 5 feet lengthwise and crosswise, except as specified in Sec. 75.205.

(2) When tensioned roof bolts are used as a means of roof support, the torque or tension range should be capable of supporting roof bolt loads of at least 50 percent of either the yield point of the bolt or anchorage capacity of the strata, whichever is less.

(3) Any opening that is more than 20 feet wide should be supported by a combination of roof bolts and conventional supports.

(4) In any opening more than 20 feet wide--

(i) Posts should be installed to limit each roadway to 16 feet wide where straight and 18 feet wide where curved; and

(ii) A row of posts should be set for each 5 feet of space between the roadway posts and the ribs.

(5) Openings should not be more than 30 feet wide.

(c) Installation of roof support using mining machines with integral roof bolters. (1) Before an intersection or pillar split is started, roof bolts should be installed on at least 5-foot centers where the work is performed.

(2) Where the roof is supported by only two roof bolts crosswise, openings should not be more than 16 feet wide.

(d) Pillar recovery. (1) During development, any dimension of a pillar should be at least 20 feet.

(2) Pillar splits and lifts should not be more than 20 feet wide.

(3) Breaker posts should be installed on not more than 4-foot centers.

(4) Roadside-radius (turn) posts, or equivalent support, should be installed on not more than 4-foot centers leading into each pillar split or lift.

(5) Before full pillar recovery is started in areas where roof bolts are used as the only means of roof support and openings are more than 16 feet wide, at least one row of posts should be installed to limit the roadway width to 16 feet. These posts should be--

(i) Extended from the entrance to the split through the intersection outby the pillar in which the split or lift is being made; and

(ii) Spaced on not more than 5-foot centers.

(e) Unsupported openings at intersections. Openings that create an intersection should be permanently supported

or at least one row of temporary supports should be installed on not more than 5-foot centers across the opening before any other work or travel in the intersection.

(f) ATRS systems in working sections where the mining height is below 30 inches. In working sections where the mining height is below 30 inches, an ATRS system should be used to the extent practicable during the installation of roof bolts with roof bolting machines and continuous-mining machines with integral roof bolters.

(g) Longwall mining systems. (1) Systematic supplemental support should be installed throughout--

(i) The tailgate entry of the first longwall panel prior to any mining; and

(ii) In the proposed tailgate entry of each subsequent panel in advance of the frontal abutment stresses of the panel being mined.

(2) When a ground failure prevents travel out of the section through the tailgate side of the longwall section, the roof control plan should address--

(i) Notification of miners that the travelway is blocked;

(ii) Re-instruction of miners regarding escapeways and escape procedures in the event of an emergency;

(iii) Re-instruction of miners on the availability and use of self-contained self-rescue devices;

(iv) Monitoring and evaluation of the air entering the longwall section;

(v) Location and effectiveness of the two-way communication systems; and

(vi) A means of transportation from the section to the main line.

(3) The plan provisions addressed by paragraph (g) (2) of this section should remain in effect until a travelway is reestablished on the tailgate side of a longwall section.

TITLE 30--MINERAL RESOURCES

CHAPTER I--MINE SAFETY AND HEALTH ADMINISTRATION, DEPARTMENT OF LABOR

PART 75_MANDATORY SAFETY STANDARDS_UNDERGROUND COAL MINES--Table of Contents

Subpart C_Roof Support

Sec. 75.223 Evaluation and revision of roof control plan.

(a) Revisions of the roof control plan shall be proposed by the operator--

(1) When conditions indicate that the plan is not suitable for controlling the roof, face, ribs, or coal or rock bursts; or

(2) When accident and injury experience at the mine indicates the plan is inadequate. The accident and injury experience at each mine shall be reviewed at least every six months.

(b) Each unplanned roof fall and rib fall and coal or rock burst that occurs in the active workings shall be plotted on a mine map if it--

(1) Is above the anchorage zone where roof bolts are used;

(2) Impairs ventilation;

(3) Impedes passage of persons;

(4) Causes miners to be withdrawn from the area affected; or

(5) Disrupts regular mining activities for more than one hour.

(c) The mine map on which roof falls are plotted shall be available at the mine site for inspection by authorized representatives of the Secretary and representatives of miners at the mine.

(d) The roof control plan for each mine shall be reviewed every six months by an authorized representative of the Secretary. This review shall take into consideration any falls of the roof, face and ribs and the adequacy of the support systems used at the time.